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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,669	07/30/2003	Akira Sekiguchi	402728	6426
23548	7590	01/12/2005	EXAMINER	
LEYDIG VOIT & MAYER, LTD 700 THIRTEENTH ST. NW SUITE 300 WASHINGTON, DC 20005-3960			SEVER, ANDREW T	
			ART UNIT	PAPER NUMBER
			2851	

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/629,669

Applicant(s)

SEKIGUCHI ET AL.

Examiner

Andrew T Sever

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings were received on 10/29/2004. These drawings are acceptable.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Akiyama (US 6,688,756.)

Akiyama teaches in figures 2, 3, and 11 a lamp (150A) comprising:

An illuminant section having an illuminant for radiating light (part 22 of figure 11), the light having a size determined by an arc length, wherein the arc length has a direction aligned with an optical axis of the lamp;

A lamp reflector (24) having a parabolic focus located at a center point of the illuminant in the illuminant section, for reflecting, as a parallel light flux, parallel to the optical axis, a light flux radiated from the center point of the illuminant section, by a paraboloid of revolution surface developed around the optical axis and directed toward a

forward direction of the optical axis (see column 8 lines 1-45 which explains that the reflector in one embodiment is parabolic (where $K=1$) which makes the light a parallel light flux); and

A lamp front glass (30A, it should be noted that in column 8 lines 1-45 in the case where the reflector is parabolic, Akiyama still teaches that the lamp front glass is useful for high performance see lines 27-31) having an incident plane and an outgoing plane (30 Ao), for receiving the parallel light flux from the lamp reflector through the incident plane and outputting the parallel light flux through the outgoing plane, wherein

The paraboloid of revolution surface of the lamp reflector is a deformation of an aspherical reflection surface rotationally symmetrical with respect to the optical axis (a paraboloid of revolution lamp reflector is inherently an aspherical reflection surface as since it is a paraboloid and not a sphere it is aspherical),

The aspherical reflection surface including a plurality of infinitesimal mirrors oriented at respective radiation angles with respect to the light from the illuminant section and reflecting an individual ray to a intersection non the optical axis where the optical axis intersects the lamp front glass, the lamp front glass being perpendicular to the optical axis, (Formula 3 in column 7 is the surface of revolution for forming the aspherical reflection surface, all surfaces of revolution could be described as plurality of infinitesimal surface (mirrors) placed next to each other and infinitesimally displaced from the previous infinitesimal surface (mirror) according to the formula for the surface of revolution (in this case a formula for a paraboloid). See any elementary Calculus text on surfaces of revolutions. With regards to the intersections, see figure 2 which shows

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that even with an ellipsoid reflector all the light would intersect a plane which is the lamp front glass, also see figure 11 which shows a slightly larger lamp front glass that covers the entire output of the reflector.)

At least one of the incident plane and the outgoing plane (30 Ao) of the lamp front glass is a deformation of an aspherical lens surface rotationally symmetrical with respect to the optical axis (see column 5 lines 65 through column 6 lines 44 for a discussion on how the lens 30 is modified), and

The light is collimated into the parallel light flux traveling parallel to the optical axis from the illuminant by applying corresponding power to control distribution of a divergent angle at the outgoing plane of the lamp front glass (as explained above the light is made parallel also see figure 2).

With regards to applicant's claims 2 and 3:

See figure 2 where it is clear that the area where there is no outgoing light is made less by the combination of lens and reflector.

With regards to applicant's claim 4:

See figure 11, which shows a polarization conversion device (62, 64, and 66).

With regards to applicant's claim 6:

Lens 70 condenses the light onto the light valve LA, which then passes the light through a projection optical system and onto a screen as shown in figure 14.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama as applied to claims 1-4 and 6 above, and further in view of Karasawa et al. (US 6,491,396.)

As described in more detail above Akiyama teaches an image display device comprising in part a lamp comprising among other things an illuminant, a parabolic reflector, and a lamp front glass. Akiyama however does not teach a rod integrator for receiving light from a condenser lens and outputting the flux of the light from its outgoing surface. Karasawa teaches in column 10 ~~lines~~ 26-42 that with a parabolic reflector, a condenser lens is used in combination with a rod integrator to produce a plurality of light source images at the imaging device. Karasawa teaches that this is useful in column 2 lines 41-51, since if such a device is not present colors will bleed onto adjacent pixels, resulting in a lower quality image. Accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the rod integrator as well as condenser lens group in the display device, which has a condensing optical system, and lamp as taught by Akiyama.

With regards to applicant's claim 7:

See figure 1 of Karasawa for example (relay optical system (30) modulator (1000) projection lens (300), and screen (2000).)

Response to Arguments

6. Applicant's arguments with respect to claims 1-4 and 6 have been considered but are moot in view of the new ground(s) of rejection.

Applicant amended claim 1 to include a description of the paraboloid surface of revolution, however it was noted that although Akiyama does not teach a paraboloid surface of revolution as its preferred embodiment, it does none-the-less teach how to make the reflector a nearly paraboloid surface of revolution using a provided mathematical formula and teaches what the effect of doing so would have. Since in essence the actual formula for making a parabolic reflector is now claimed, Akiyama does anticipate claim 1 and therefore the rejection has been changed from a 35 USC 103 type rejection to a 102e type rejection and made final.

Addressing applicant's argument, applicant's amendment is supported by the specification, however it is not believed that the referenced section of applicant's specification teaches anything that is not known in the art. It is simply a description of what every science/engineering student learns in a college calculus class; that complex objects (such a parabolic curved mirrors) can be approximated by an infinite number of infinitesimal little uncomplicated objects (flat mirrors) that are then summed together (integral calculus). As for the light intersecting a plane, although it might not intersect in

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phase, since the lens is in the way and forms a plane, inherently it does intersect the plane. Accordingly applicant's arguments/amendment was not found persuasive and the new rejection is made final.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US 6,499,845 Sato, which teaches in, figures 5-7 parabolic reflectors with lamp front glasses.

US 6,585,397 to Ebiko teaches in figure 1 a parabolic reflector which is made of at least 3 smaller parabolic reflectors (5, 3, and 4).

US 6,578,996 to Kawashima et al. teaches a method of fabricating a reflector.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Sever whose telephone number is 571-272-2128. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AS


JUDY NGUYEN
SUPERVISORY PATENT EXAMINER